RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

Revitalizing a Regional Power House

Grand Coulee Dam, 3rd Powerplant Overhaul

[music]

Mark Jenson: Grand Coulee Dam is one of our Nation's greatest assets and it might be considered the region's crown jewel. It's the largest capacity hydropower project in the US and the 4th largest in the world. Between power production and irrigation, it produces nearly $2 billion a year in benefits. But like all great public works projects, the upkeep and maintenance are challenges that are felt at all levels of our organization.

[music]

Generators in the 3rd Power Plant are undergoing a $100 million upgrade that promises to bring the 40-year-old power house into the 21st century, and it will help assure another 40 years of clean, renewable, low-cost hydropower for the Northwest.

Much of the overhaul work is already well underway including upgrades to the power house cranes, elevators and gate repair chamber, replacement of the generator governors, exciters and transformers, and construction of new overhead transmission lines as well as a new materials storage building. One good example of what we've achieved is the overhead line job.

40-year old oil-filled cables that run through the dam to connect the 3rd powerhouse to the power grid have exceeded their useful life and they present unacceptable failure risks. To replace these cables, six new towers, three of which are well over 300 feet tall, were completed in September, and new overhead power lines have been strung 3600 feet across the Columbia River.

But most of the work we have going on right now is just in preparation for the main overhaul work. The overhaul work will begin with Unit G-24, the first of the turbine overhauls to be done on the world's largest hydrogenerating units.

[turbine spinning]

It takes a lot of moving parts to make these massive generators work, and after forty years of hard service, many of these parts are worn beyond tolerance. The overhauls will require complete disassembly of the generating units, something that has not been done since they were originally built. This will involve removal of the 2000 ton rotors, and un-stacking the machines all the way down to removal of the water wheel turbine itself. This work will require about 5 years to complete.

We’re proud of the work Grand Coulee’s staff, trades people, and contractors have contributed. Grand Coulee is the largest hydropower facility in the U.S. and the hydropower workhorse of the Columbia River.